

**Amendment Under 37 C.F.R. § 1.111**  
**U.S. Serial No. 09/978,275**

**Attorney Docket No.: Q66727**

**AMENDMENTS TO THE DRAWINGS**

Applicant is submitting two replacement drawing sheets including Figs. 1 and 5. The reference element 100 has been added.

Attachments: Two Replacement Sheets

**REMARKS**

Claims 1-21 have been examined. With this amendment, Applicant adds claims 22-41. Claims 1-41 are all the claims pending in the application.

**1. Formalities**

Applicant thanks the Examiner for acknowledging the claim for foreign priority and for confirming receipt of the certified copies of the priority documents.

Applicant thanks the Examiner for initialing the references listed on form PTO-1449 submitted with the Information Disclosure Statements filed on October 17, 2001, and September 29, 2003.

**2. Drawings**

The Examiner has objected to the drawings for failing to show the reference numeral 100. Applicant submits that the modifications to Figs. 1 and 5 obviate the objection.

**3. Claim Rejections Under 35 U.S.C. § 102**

The Examiner has rejected claims 1-5, 7, 9, 11-13 and 20 under 35 U.S.C. § 102(b) as being anticipated by Aach et al. (US 6,173,084) ["Aach"]. For at least the following reasons, Applicant traverses the rejection.

Claim 1, as amended, recites an apparatus for suppressing noise in an input image signal comprising "a characteristic calculation unit which obtains at least one first characteristic of said input image signal by calculation using a function based on first information indicating an exposure dose with which said radiographic image has been produced." The Examiner contends that Aach discloses features of a characteristic relating to the exposure dose. Specifically, the

Examiner contends that local gradients correspond to the claimed first characteristic and that the pixels values used to obtain the local gradients are directly affected by the exposure dose.

Aach discloses that a local gradient  $g_1$  is derived from differences between local pixel values that are interpolated from a corresponding gradient from the next coarser resolution level (col. 9, lines 45-54). Applicant submits that, even if various exposure doses are applied, the difference between the local pixel-values would produce the same values. Accordingly, the local gradient  $g_1$  of Aach does not depend on an exposure dose.

Therefore, Aach does not disclose or suggest the claimed first characteristic based on information indicating an exposure dose, as set forth in claim 1.

Because claims 7 and 9 recite features similar to that given above with respect to claim 1, Applicant submits that claims 7 and 9 are patentable for at least reasons similar to those given above with respect to claim 1.

Claim 11 recites an apparatus for suppressing noise comprising “an index-value obtaining unit which obtains at least one index value indicating a degree of suppression of said noise, the at least one index value corresponding to a function based on information indicating an exposure dose with which said radiographic image has been produced.” The Examiner contends that weight factor  $\alpha$  corresponds to the claimed index-value.

Aach discloses that weight factor  $\alpha$  is a function of the local gradient (col. 6, lines 60-61). Applicant submits that, for reasons similar to those given above with respect to claim 1, Aach does not disclose the weight factor  $\alpha$  is based on the exposure dose. Accordingly, Aach does not

disclose or suggest the claimed index value based on information indicating an exposure dose, as set forth in claim 11.

Because claims 20 recites language similar to that given above with respect to claim 11, Applicant submits that claim 20 is patentable for at least reasons similar to those given above with respect to claim 11.

Applicant submits that claims 2-5, 12 and 13 are patentable at least by virtue of their respective dependencies.

**4. Claim Rejections Under 35 U.S.C. § 103**

The Examiner has rejected claim 6 under 35 U.S.C. § 103(a) as being unpatentable over Aach in view of Wood et al. (US 5,351,305) ["Wood"]. For at least the following reason, Applicant traverses the rejection.

Because Wood does not cure the deficient teachings of Aach with respect to claim 1, Applicant submits that claim 6 is patentable at least by virtue of its dependency.

The Examiner has rejected claims 8, 10 and 21 under 35 U.S.C. § 103(a) as being unpatentable over Aach. For at least the following reasons, Applicant traverses the rejection.

The Examiner contends that the computer-readable storage medium would have been obvious to one skilled in the art.

Because the Examiner has not contended that the other features of claims 8, 10 and 21 are obvious and because claims 8, 10 and 21 recite features similar to those given above with respect to claims 7, 9 and 20, respectively, Applicant submits that claims 8, 10 and 21 are patentable for at least reasons similar to those given above with respect to claims 7, 9 and 20.

The Examiner has rejected claims 14-17 under 35 U.S.C. § 103(a) as being unpatentable over Aach in view of Ogino (US Patent Application 2002/0094114) ["Ogino"]. For at least the following reason, Applicant traverses the rejection.

Because the present application's priority dates (October 17, 2000, and October 25, 2000) predate Ogino's filing date (October 8, 2001), Applicant submits that the Examiner may not rely on Ogino. Applicant is hereby submitting verified English translations of the present application's priority documents, JP 2000-324904 and JP 2000-316235, thereby perfecting priority.

The Examiner has rejected claim 18 under 35 U.S.C. § 103(a) as being unpatentable over Aach in view of Neitzel et al. (US 5,550,888) ["Neitzel"]. For at least the following reasons, Applicant traverses the rejection.

Claim 18 recites an apparatus for suppressing noise in an input image signal "wherein said noise suppression unit processes one of said plurality of band-limited image signals so as to generate a transformed image signal, and obtains a weighted sum of said one of said plurality of band-limited image signals and said transformed image signal by using weights determined based on said at least one index value." The Examiner contends Neitzel discloses this feature because the invention in Neitzel allegedly has a low-pass image that is summed with the original image.

Applicant submits that the Examiner's reasons for combining the references is not supported in the prior art. The mere fact that references can be combined does not render the

resultant combination obvious unless the prior art provides the suggestion or motivation. MPEP at 2100-131.

Neitzel relates to the display of images where the contrast and density are independent from each other by applying filtering to the input image and adding the original image (see Abstract and Summary of the Invention). There is no disclosure or suggestion this technique will be successful in applications for suppressing noise. The invention in Aach relates to noise reduction in an image (see Abstract). There is no disclosure or suggestion in Aach of changing contrast or density in the image.

The mere fact that filters are used in both processes does not necessarily mean that the filters perform the same function or are combinable. The Examiner's speculation that "the original image (avoids/reduces unnecessary losses) if transformed image is not heavily filtered" is not supported in at least the context of noise filtering as it relates to Aach. Accordingly, since it is the noise suppressing invention in Aach that is being modified, Applicant submits that the Examiner has not made a *prima facie* case of obviousness.

The Examiner has rejected claim 19 under 35 U.S.C. § 103(a) as being unpatentable over Aach in view of Neitzel and Vuylsteke et al. (US 5,461,655) ["Vuylsteke"]. For at least the following reason, Applicant traverses the rejection.

Because Vuylsteke does not cure the deficient teachings of Aach and Neitzel with respect to claim 18, Applicant submits that claim 19 is patentable at least by virtue of its dependency on claim 18.

**5. New Claims**

With this amendment, Applicant adds claims 22-41. Applicant submits that these claims are patentable at least by virtue of their respective dependencies, as well as the features set forth therein.

**6. Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

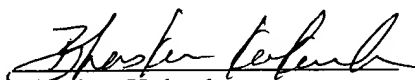
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**23373**

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